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THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: John W. Bulluck et al.

Filed: June 14, 2001

For: DIMENSIONALLY STABLE ACRYLATE ADHESIVES

Serial No.: 09/881,587

Group Art Unit: 1712

Examiner: Sellers, Robert

Atty Dkt: TRIA:002

Pursuant to 37 C.F.R. 1.8, I certify that this correspondence is being transmitted via facsimile and is addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date below:

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Commissioner for Patents  
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**APPEAL BRIEF**

This Brief is submitted within two months of the date of receipt by the PTO of the Notice of Appeal to the Honorable Board of Appeals in triplicate as required by 37 CFR 1.921. The fee for submitting the Brief is enclosed herewith. If the fee is missing, the Commissioner is authorized to deduct the requisite fee from deposit account 10-1205.

**1. Real Party in Interest**

This application is assigned to Texas Research International, Inc., the real party in interest.

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## **2. Related Appeals and Interferences**

There are no appeals or interferences known to appellant, the undersigned, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

## **3. Status of Claims**

The claims on appeal are claims 1-6, 8-15, and 88-100.

Claims 7 and 16-87 are canceled.

## **4. Status of Amendments**

The amendment submitted after the Final Office Action was entered.

## **5. Summary of Invention**

This invention pertains to a two-part acrylate adhesive system, which comprises an adhesive part A and an activator part B. Part A includes an acrylate monomer, a free-radical initiator, and an antioxidant. Part B includes an N,N-disubstituted aromatic amine, a difunctional methacrylate monomer, and an antioxidant.

An important aspect of the claimed invention is that the difunctional methacrylate monomer is present in an amount of from 10 to 80 percent by weight based on the total weight of the adhesive system, and wherein the difunctional methacrylate monomer is an alkylene glycol dimethacrylate.

## **6. Issues**

1. Whether the examiner erred in rejecting claims 1, 3-6, 8-15, and 88-100 under §103 based on EP 96,500 in view of EP 452,540?

2. Whether the examiner erred in rejecting claims 1,3-6, 8-15, and 88-100 under §103 based on EP 452,540 and JP 53-144760 in view of EP 96,500?

3. Whether the examiner erred in rejecting claims 2 and 88 under § 103 based on EP 452,540 and JP 53-144760 in view of EP 96,500 and further in view of Edelman (US 5,865,936)?

## **7. Grouping of Claims**

The claims do not stand or fall together.

Group 1 – Claims 1, 3-5, 8-15, 88-91, and 93-100.

Group 2 – Claims 6 and 72.

Group 3 - Claims 2 and 88.

The claims in Group 1 are relevant to issues 1 and 2.

The claims of Group 2 are relevant to issues 1 and 2. Group 2 is to be considered separately because these dependent claims require fused silica, and Group 2 is separately patentable as explained below.

The claims in Group 3 were rejected separately and are relevant to issue 3. That is, the claims of Group 3 were not rejected based on the rationale of either issue 1 or 2. Group 3 is to be considered separately as this group was subject of a distinct rejection under §103, and is separately patentable from Group 1 as explained below.

## **8. Argument**

### **Issue 1, Group 1 – Claims 1, 3-5, 8-15, 88-91, and 93-100**

Claims 1, 3-6, 8-15, and 89-100 were rejected under §103 based on EP 96,500 in view of EP 452,540. The examiner reasoned:

The newly claimed content of difunctional methacrylate monomer of from 10-80 percent by weight in independent claims 1 and 15 is not exemplified in European '500. European '540 teaches the use of from 1-60% of an alkanediol dimethacrylate in first component (A) (page 2, lines 15-16) and exemplifies 20% of ethylene glycol dimethacrylate (page 4, Example 9).

It would have been obvious to employ the alkanediol dimethacrylate such as the exemplified butylene glycol dimethacrylate of European '500 in an amount of as much as 20% shown in European '540 in order to enhance the water and fuel resistance (European '540, abstract, page 2, Use/Advantage section, last line).

(Final Action at pages 3-4.) Appellant disagrees.

In particular, appellant submits that the examiner (a) has failed to establish a teaching or suggestion to support the combination, (b) has incorrectly picked and chosen selected disclosure without considering the references as a whole, (c) has distorted or ignored passages in the applied references, and (d) has used impermissible hindsight to reconstruct the claims.

Contrary to the examiner's allegation in the final action, there is no teaching or suggestion or motivation to employ "1-60%" of alkanediol dimethacrylate or "as much as 20%" of butylene glycol dimethacrylate, as disclosed in EP '540, in the composition disclosed in EP '500. The examiner's allegation is founded on the premise that a skilled artisan would use such 20% to "enhance the water and fuel resistance." However, this property – water and fuel resistance – is of the entire adhesive disclosed in EP '540. The examiner is merely identifying a property of the whole adhesive in EP '540. This language in EP '540 thus constitutes merely a statement as to the desired properties of the final composition, not a suggestion that motivates a skilled artisan to modify the composition of EP '500 by picking selected items in selected proportions. Likewise, there is no disclosure

whatsoever in EP '540 that the amount of alkanediol dimethacrylate provides the enhanced water and fuel resistance. Again, the examiner is picking and choosing selected portions of this reference, and ignores EP '540's disclosure as a whole.

What is more, there is no indication or suggestion in EP '500 that water and fuel resistance is desired or in need of improvement (if present).

It can be seen that the examiner has manufactured motivation to combine where there is no motivation to combine. Indeed, the examiner has distorted the disclosure of EP '540 to allege that this reference leads the skilled artisan to select a specific monomer in a specific amount for the specific purpose of enhancing water and fuel resistance, despite there being no suggestion that the specific monomer in the specific amount will in and of itself impart improved water and fuel resistance to the adhesive as a whole.

In view of the foregoing, it is submitted that the examiner engaged in impermissible hindsight to reconstruct the claims by picking and choosing portions of the references without motivation to do so.

As such, there is no suggestion that any particular component should be selected and employed in the stated percentage in an entirely different composition. The mere fact that both EP '540 and EP '500 disclose alkanediol dimethacrylates is not sufficient. The examiner fails to show adequate motivation to make the combination.

In the advisory action after appellant's response to final action, the examiner did not appear to comment on appellant's remarks with respect to "water and fuel resistance" not providing motivation. It is unclear whether the examiner continues to make the assertion as to "water and fuel resistance" providing motivation because in the examiner switched gears, asserting that EP '500 and EP '540 both show two-part adhesives which allegedly prove up motivation to combine. (See page 3, first full paragraph of the advisory action.) Further, the examiner asserted that since EP '540 used 1-60% alkanediol dimethacrylate as a crosslinking monomer, it would be obvious to use the alkanediol dimethacrylate of EP '500 within the range of from 1-60% and 50% in order "to optimize

the crosslinking of the polymerized monomer mixture.” (See page 3, second full paragraph of the advisory action.) The examiner’s allegations in the advisory are also improper and incorrect.

In particular, EP ‘500 discloses only 2 percent of its difunctional methacrylate in the examples, which is the only place in EP ‘500 where any amounts of difunctional methacrylate are disclosed. Appellants’ claimed lower end of 10 percent is roughly 5 times greater than that disclosed in EP ‘500 if EP ‘500 discloses 2 percent of the total adhesive (and roughly 10 times greater if the 2 percent is for an A side or B side only). As such, EP ‘500 does not teach or suggest compositions that employ 10 to 80 percent by weight of difunctional methacrylate. In addition, while the examiner cites EP ‘540 for the proposition that 20% (or 40%) dimethacrylate can be used in the composition of EP ‘500, it should be noted that EP ‘500 uses 53% of monofunctional monomer and 42% of a copolymer (see e.g., example 3 where 43% tetrahydrofurfuryl methacrylate and 10% methacrylic acid and 42% of a copolymer are used). These components total 95% of the composition. As such, there is clearly no reason why a skilled artisan would use 10% or more of difunctional methacrylate. There would be no room for 20% and certainly not 40% dimethacrylate in the composition of EP ‘500. Indeed, owing to these percentages, a skilled artisan would be affirmatively motivated to not increase the amount of difunctional methacrylate. Accordingly, a skilled artisan would not be motivated to make the change to EP ‘500 that was suggested by the examiner.

The examiner has also asserted in the advisory action that the EP ‘500 is not limited to its examples. However, there is no suggestion in this reference to have less than 95% monofunctional monomer and copolymer. The examples, furthermore, are the only place where amounts are mentioned. Silence in a reference is hardly a proper substitute for an adequate disclosure of facts from which a conclusion of obviousness may justifiably follow. *Application of Bart*, 356 F.2d 115, 148 U.S.P.Q. 548 (CCPA 1966).

Apart from the examples, there is no disclosure in EP ‘500 as to amounts. Thus, the examiner’s admonition that a reference is not limited to the examples has no bearing on the case at hand. Likewise, the examiner reference to page 2, lines 19-21 and page 3, lines 6-16 misses the point entirely since these passages provide no rationale for any amounts whatsoever. The passages cited

by the examiner merely describe the monomers that can be used: no amounts are given at all. It can be seen, therefore, that EP '500 provides no disclosure as to proportions and amounts except in the three examples.

Furthermore, apart from circular reasoning that one would want to increase crosslinking by increasing the amount of crosslinker, the examiner has provided no reasoning whatsoever why a skilled artisan would want to increase the amount of crosslinking in the composition of EP '500. Indeed, the fact that every single example (the only disclosure of amount in EP '500) discloses less than about two percent dimethacrylate teaches away from the examiner's assertion. In other words, there is no reason apparent that one would desire additional crosslinking in EP '500.

What is more, the compositions of EP '500 and '540 are quite different. EP '500 discloses a unique cure system which includes ferrocene as a required component. The cure system provides "a controllable induction period ... followed by rapid polymerization." (Page 2, lines 3-6.) By contrast, EP '540 strictly uses an organic peroxide. Owing to the specific properties of EP '500's composition, a skilled artisan would not be motivated to make changes to use five times, or more, dimethacrylate based on the disclosure in an unrelated reference (the EP '540 reference). Furthermore, there is no indication that "water and fuel resistance" is a desired property, let alone is deficient, in EP '500's composition.

In the advisory action, the examiner asserts that the "ferrocene accelerator with the peroxide in European '500 does not render it 'quite different' from the formulation of European '540 since it is a non-reactive component which increases the cure rate which is not repugnant to the equivalent two-part adhesive of European '540." (Advisory action at page 2.) Here, the examiner again overlooks the disclosure of EP '500. As noted above, the examiner overlooks the specific properties of the polymers of each reference, and fails to explain why there is motivation for the combination. In particular, the examiner's statement that an increase "is not repugnant to the equivalent two-part adhesive" is simply not the same as a motivation to make the change.

In view of the foregoing, the examiner erred in rejecting the claims of Group 1 based on EP '500 in view of EP '540. The rejection should therefore be withdrawn.

### **Issue 1, Group 2 – Claims 6 and 92**

Claims 1, 3-6, 8-15, and 89-100 were rejected under §103 based on EP 96,500 in view of EP 452,540. The examiner reasoned:

The newly claimed content of difunctional methacrylate monomer of from 10-80 percent by weight in independent claims 1 and 15 is not exemplified in European '500. European '540 teaches the use of from 1-60% of an alkanediol dimethacrylate in first component (A) (page 2, lines 15-16) and exemplifies 20% of ethylene glycol dimethacrylate (page 4, Example 9).

It would have been obvious to employ the alkanediol dimethacrylate such as the exemplified butylene glycol dimethacrylate of European '500 in an amount of as much as 20% shown in European '540 in order to enhance the water and fuel resistance (European '540, abstract, page 2, Use/Advantage section, last line).

(Final Action at pages 3-4.) Appellant disagrees.

In particular, appellant submits that the examiner (a) has failed to establish a teaching or suggestion to support the combination, (b) has incorrectly picked and chosen selected disclosure without considering the references as a whole, (c) has distorted or ignored passages in the applied references, and (d) has used impermissible hindsight to reconstruct the claims.

Contrary to the examiner's allegation in the final action, there is no teaching or suggestion or motivation to employ "1-60%" of alkanediol dimethacrylate or "as much as 20%" of butylene glycol dimethacrylate, as disclosed in EP '540, in the composition disclosed in EP '500. The examiner's allegation is founded on the premise that a skilled artisan would use such 20% to "enhance the water and fuel resistance." However, this property – water and fuel resistance – is of the entire adhesive disclosed in EP '540. The examiner is merely identifying a property of the whole adhesive in EP '540. This language in EP '540 thus constitutes merely a statement as to the desired properties of the final composition, not a suggestion that motivates a skilled artisan to modify the composition of EP '500 by picking selected items in selected proportions. Likewise, there is no disclosure whatsoever in EP '540 that the amount of alkanediol dimethacrylate provides the enhanced water and fuel resistance. Again, the examiner is picking and choosing selected portions of this reference, and ignores EP '540's disclosure as a whole.



What is more, there is no indication or suggestion in EP '500 that water and fuel resistance is desired or in need of improvement (if present).

It can be seen that the examiner has manufactured motivation to combine where there is no motivation to combine. Indeed, the examiner has distorted the disclosure of EP '540 to allege that this reference leads the skilled artisan to select a specific monomer in a specific amount for the specific purpose of enhancing water and fuel resistance, despite there being no suggestion that the specific monomer in the specific amount will in and of itself impart improved water and fuel resistance to the adhesive as a whole.

In view of the foregoing, it is submitted that the examiner engaged in impermissible hindsight to reconstruct the claims by picking and choosing portions of the references without motivation to do so.

As such, there is no suggestion that any particular component should be selected and employed in the stated percentage in an entirely different composition. The mere fact that both EP '540 and EP '500 disclose alkanediol dimethacrylates is not sufficient. The examiner fails to show adequate motivation to make the combination.

In the advisory action after appellant's response to final action, the examiner did not appear to comment on appellant's remarks with respect to "water and fuel resistance" not providing motivation. It is unclear whether the examiner continues to make the assertion as to "water and fuel resistance" providing motivation because in the examiner switched gears, asserting that EP '500 and EP '540 both show two-part adhesives which allegedly prove up motivation to combine. (See page 3, first full paragraph of the advisory action.) Further, the examiner asserted that since EP '540 used 1-60% alkanediol dimethacrylate as a crosslinking monomer, it would be obvious to use the alkanediol dimethacrylate of EP '500 within the range of from 1-60% and 50% in order "to optimize the crosslinking of the polymerized monomer mixture." (See page 3, second full paragraph of the advisory action.) The examiner's allegations in the advisory are also improper and incorrect.

In particular, EP '500 discloses only 2 percent of its difunctional methacrylate in the examples, which is the only place in EP '500 where any amounts of difunctional methacrylate are disclosed. Appellants' claimed lower end of 10 percent is roughly 5 times greater than that disclosed in EP '500 if EP '500 discloses 2 percent of the total adhesive (and roughly 10 times greater if the 2 percent is for an A side or B side only). As such, EP '500 does not teach or suggest compositions that employ 10 to 80 percent by weight of difunctional methacrylate. In addition, while the examiner cites EP '540 for the proposition that 20% (or 40%) dimethacrylate can be used in the composition of EP '500, it should be noted that EP '500 uses 53% of monofunctional monomer and 42% of a copolymer (see e.g., example 3 where 43% tetrahydrofurfuryl methacrylate and 10% methacrylic acid and 42% of a copolymer are used). These components total 95% of the composition. As such, there is clearly no reason why a skilled artisan would use 10% or more of difunctional methacrylate. There would be no room for 20% and certainly not 40% dimethacrylate in the composition of EP '500. Indeed, owing to these percentages, a skilled artisan would be affirmatively motivated to not increase the amount of difunctional methacrylate. Accordingly, a skilled artisan would not be motivated to make the change to EP '500 that was suggested by the examiner.

The examiner has also asserted in the advisory action that the EP '500 is not limited to its examples. However, there is no suggestion in this reference to have less than 95% monofunctional monomer and copolymer. The examples, furthermore, are the only place where amounts are mentioned. Silence in a reference is hardly a proper substitute for an adequate disclosure of facts from which a conclusion of obviousness may justifiably follow. *Application of Bart*, 356 F.2d 115, 148 U.S.P.Q. 548 (CCPA 1966).

Apart from the examples, there is no disclosure in EP '500 as to amounts. Thus, the examiner's admonition that a reference is not limited to the examples has no bearing on the case at hand. Likewise, the examiner reference to page 2, lines 19-21 and page 3, lines 6-16 misses the point entirely since these passages provide no rationale for any amounts whatsoever. The passages cited by the examiner merely describe the monomers that can be used: no amounts are given at all. It can be seen, therefore, that EP '500 provides no disclosure as to proportions and amounts except in the three examples.

Furthermore, apart from circular reasoning that one would want to increase crosslinking by increasing the amount of crosslinker, the examiner has provided no reasoning whatsoever why a skilled artisan would want to increase the amount of crosslinking in the composition of EP '500. Indeed, the fact that every single example (the only disclosure of amount in EP '500) discloses less than about two percent dimethacrylate teaches away from the examiner's assertion. In other words, there is no reason apparent that one would desire additional crosslinking in EP '500.

What is more, the compositions of EP '500 and '540 are quite different. EP '500 discloses a unique cure system which includes ferrocene as a required component. The cure system provides "a controllable induction period ... followed by rapid polymerization." (Page 2, lines 3-6.) By contrast, EP '540 strictly uses an organic peroxide. Owing to the specific properties of EP '500's composition, a skilled artisan would not be motivated to make changes to use five times, or more, dimethacrylate based on the disclosure in an unrelated reference (the EP '540 reference). Furthermore, there is no indication that "water and fuel resistance" is a desired property, let alone is deficient, in EP '500's composition.

In the advisory action, the examiner asserts that the "ferrocene accelerator with the peroxide in European '500 does not render it 'quite different' from the formulation of European '540 since it is a non-reactive component which increases the cure rate which is not repugnant to the equivalent two-part adhesive of European '540." (Advisory action at page 2.) Here, the examiner again overlooks the disclosure of EP '500. As noted above, the examiner overlooks the specific properties of the polymers of each reference, and fails to explain why there is motivation for the combination. In particular, the examiner's statement that an increase "is not repugnant to the equivalent two-part adhesive" is simply not the same as a motivation to make the change.

The rejection is further in error with respect to Claims 6 and 92 (Group 2) because the references provide no teaching or suggestion, either alone or in combination, of the claimed subject matter of the base claims that further comprise fused silica in Part A. EP '500 merely discloses 1.5% of silicon dioxide in the examples, which is different from fused silica. Claims 6 and 92 were improperly rejected for this additional reason.

In view of the foregoing, the examiner erred in rejecting the claims of Group 2 based on EP '500 in view of EP '540. The rejection should therefore be withdrawn.

**Issue 2, Group 1 - Claims 1, 3-5, 8-15, 88-91, and 93-100**

Claims 1, 3-6, 8-15, and 89-100 were rejected under §103 based on EP 452,540 and JP 53-144760 in view of EP 96,500. The examiner reasoned in the final action that

The newly claimed content of difunctional methacrylate monomer of from 10-80 percent by weight in independent claims 1 and 15 is not recited in Japanese '760. Japanese '760 sets forth each liquid of the two-liquid adhesive as containing polyethylene glycol dimethacrylate. It would have been obvious to employ the alkanediol dimethacrylate such as the polyethylene glycol dimethacrylate of Japanese '760 in an amount of as much as 20% by weight shown in European '540 in order to enhance the water and fuel resistance (European '540, abstract, page 2, Use/Advantage section, last line).

(Final Action at page 4.)

Since the rejection was based on "EP 452,540 and JP 53-144760 in view of EP 96,500," appellant initially notes that EP '500 as well as the combination of EP '500 with EP '540 have been distinguished above, and are reiterated here. Appellant further notes that the examiner has not even mentioned EP '500 in the discussion section of this rejection. The examiner has thus given no rationale for purposes of this specific rejection (Issue 2) as to why EP '500 is applicable to the claims on appeal. Appellant will nonetheless comment on the combination of EP '540 and EP '500 by reiterating the comments above.

In particular, appellant submits that the examiner (a) has failed to establish a teaching or suggestion to support the combination, (b) has incorrectly picked and chosen selected disclosure without considering the references as a whole, (c) has distorted or ignored passages in the applied references, and (d) has used impermissible hindsight to reconstruct the claims.

Contrary to the examiner's allegation in the final action, there is no teaching or suggestion or motivation to employ "1-60%" of alkanediol dimethacrylate or "as much as 20%" of butylene glycol dimethacrylate, as disclosed in EP '540, in the composition disclosed in EP '500. The examiner's allegation is founded on the premise that a skilled artisan would use such 20% to "enhance the water and fuel resistance." However, this property – water and fuel resistance – is of the entire adhesive disclosed in EP '540. The examiner is merely identifying a property of the whole adhesive in EP '540. This language in EP '540 thus constitutes merely a statement as to the desired properties of the final composition, not a suggestion that motivates a skilled artisan to modify the composition of EP '500 by picking selected items in selected proportions. Likewise, there is no disclosure whatsoever in EP '540 that the amount of alkanediol dimethacrylate provides the enhanced water and fuel resistance. Again, the examiner is picking and choosing selected portions of this reference, and ignores EP '540's disclosure as a whole.

What is more, there is no indication or suggestion in EP '500 that water and fuel resistance is desired or in need of improvement (if present).

It can be seen that the examiner has manufactured motivation to combine where there is no motivation to combine. Indeed, the examiner has distorted the disclosure of EP '540 to allege that this reference leads the skilled artisan to select a specific monomer in a specific amount for the specific purpose of enhancing water and fuel resistance, despite there being no suggestion that the specific monomer in the specific amount will in and of itself impart improved water and fuel resistance to the adhesive as a whole.

In view of the foregoing, it is submitted that the examiner engaged in impermissible hindsight to reconstruct the claims by picking and choosing portions of the references without motivation to do so.

As such, there is no suggestion that any particular component should be selected and employed in the stated percentage in an entirely different composition. The mere fact that both EP '540 and EP '500 disclose alkanediol dimethacrylates is not sufficient. The examiner fails to show adequate motivation to make the combination.

In the advisory action after appellant's response to final action, the examiner did not appear to comment on appellant's remarks with respect to "water and fuel resistance" not providing motivation. It is unclear whether the examiner continues to make the assertion as to "water and fuel resistance" providing motivation because in the examiner switched gears, asserting that EP '500 and EP '540 both show two-part adhesives which allegedly prove up motivation to combine. (See page 3, first full paragraph of the advisory action.) Further, the examiner asserted that since EP '540 used 1-60% alkanediol dimethacrylate as a crosslinking monomer, it would be obvious to use the alkanediol dimethacrylate of EP '500 within the range of from 1-60% and 50% in order "to optimize the crosslinking of the polymerized monomer mixture." (See page 3, second full paragraph of the advisory action.) The examiner's allegations in the advisory are also improper and incorrect.

In particular, EP '500 discloses only 2 percent of its difunctional methacrylate in the examples, which is the only place in EP '500 where any amounts of difunctional methacrylate are disclosed. Appellants' claimed lower end of 10 percent is roughly 5 times greater than that disclosed in EP '500 if EP '500 discloses 2 percent of the total adhesive (and roughly 10 times greater if the 2 percent is for an A side or B side only). As such, EP '500 does not teach or suggest compositions that employ 10 to 80 percent by weight of difunctional methacrylate. In addition, while the examiner cites EP '540 for the proposition that 20% (or 40%) dimethacrylate can be used in the composition of EP '500, it should be noted that EP '500 uses 53% of monofunctional monomer and 42% of a copolymer (see e.g., example 3 where 43% tetrahydrofurfuryl methacrylate and 10% methacrylic acid and 42% of a copolymer are used). These components total 95% of the composition. As such, there is clearly no reason why a skilled artisan would use 10% or more of difunctional methacrylate. There would be no room for 20% and certainly not 40% dimethacrylate in the composition of EP '500. Indeed, owing to these percentages, a skilled artisan would be affirmatively motivated to not increase the amount of difunctional methacrylate. Accordingly, a skilled artisan would not be motivated to make the change to EP '500 that was suggested by the examiner.

The examiner has also asserted in the advisory action that the EP '500 is not limited to its examples. However, there is no suggestion in this reference to have less than 95% monofunctional

monomer and copolymer. The examples, furthermore, are the only place where amounts are mentioned. Silence in a reference is hardly a proper substitute for an adequate disclosure of facts from which a conclusion of obviousness may justifiably follow. *Application of Bart*, 356 F.2d 115, 148 U.S.P.Q. 548 (CCPA 1966).

Apart from the examples, there is no disclosure in EP '500 as to amounts. Thus, the examiner's admonition that a reference is not limited to the examples has no bearing on the case at hand. Likewise, the examiner reference to page 2, lines 19-21 and page 3, lines 6-16 misses the point entirely since these passages provide no rationale for any amounts whatsoever. The passages cited by the examiner merely describe the monomers that can be used: no amounts are given at all. It can be seen, therefore, that EP '500 provides no disclosure as to proportions and amounts except in the three examples.

Furthermore, apart from circular reasoning that one would want to increase crosslinking by increasing the amount of crosslinker, the examiner has provided no reasoning whatsoever why a skilled artisan would want to increase the amount of crosslinking in the composition of EP '500. Indeed, the fact that every single example (the only disclosure of amount in EP '500) discloses less than about two percent dimethacrylate teaches away from the examiner's assertion. In other words, there is no reason apparent that one would desire additional crosslinking in EP '500.

What is more, the compositions of EP '500 and '540 are quite different. EP '500 discloses a unique cure system which includes ferrocene as a required component. The cure system provides "a controllable induction period ... followed by rapid polymerization." (Page 2, lines 3-6.) By contrast, EP '540 strictly uses an organic peroxide. Owing to the specific properties of EP '500's composition, a skilled artisan would not be motivated to make changes to use five times, or more, dimethacrylate based on the disclosure in an unrelated reference (the EP '540 reference). Furthermore, there is no indication that "water and fuel resistance" is a desired property, let alone is deficient, in EP '500's composition.

In the advisory action, the examiner asserts that the "ferrocene accelerator with the peroxide in European '500 does not render it 'quite different' from the formulation of European '540 since it

is a non-reactive component which increases the cure rate which is not repugnant to the equivalent two-part adhesive of European '540." (Advisory action at page 2.) Here, the examiner again overlooks the disclosure of EP '500. As noted above, the examiner overlooks the specific properties of the polymers of each reference, and fails to explain why there is motivation for the combination. In particular, the examiner's statement that an increase "is not repugnant to the equivalent two-part adhesive" is simply not the same as a motivation to make the change.

In view of the foregoing, the examiner erred in rejecting the claims of Group 1 based on EP '500 in view of EP '540. The rejection should therefore be withdrawn.

Turning to the JP '760 abstract, it is seen that this reference gives no percentages whatsoever for the difunctional methacrylate. In this sense, JP '760 is similar to the text other than the examples of EP '500. It can be seen that JP '760 also does not teach or suggest 10 to 80 percent difunctional methacrylate in the adhesive system.

In addition to the English abstract provided by the examiner, appellant obtained a translation of Tables 1 and 2 in JP '760. A copy of the English translation of Tables 1 and 2 were attached to the response to first office action. Notably, neither example employs a dimethacrylate in JP '760.

Furthermore, the compositions of EP '540 and JP 53-144760 are completely different. In this regard, note that JP 53-144760 calls for an elastomer such as NBR or SBR. In Table 1, 10 parts by weight of carboxylated NBR are employed on both the A and B sides. Likewise, a silane coupling agent is used in all cases; however, there is no suggestion in EP '540 that a silane coupling agent can be used in the disclosed composition of EP '540.

JP 53-144760 states, moreover, that the composition disclosed therein is for adhering optical lens, which use is neither taught nor suggested in EP '540. As such, the composition of JP 53-144760 is designed for a specific purpose and attempts to modify it would be fraught with the prospect of destroying the purpose of the invention of JP 53-144760. What is more, there is no indication that the uses relied upon by the examiner to justify the combination – namely to enhance the water and fuel resistance – have any relation whatsoever to adhering two lens together as



described in JP 53-144760. Indeed, water and fuel resistance appear to be irrelevant to the use described in JP 53-144760 and there is no indication that the cured adhesive would even be exposed to the elements in the use contemplated by JP 53-144760. Accordingly, a skilled artisan would not seek to use 20% or more of a difunctional methacrylate in the composition of JP 53-144760. This further exemplifies the lack of teaching or suggestion to support the combination alleged by the examiner.

In view of the foregoing, JP 53-144760, alone or in combination with any of the applied references including EP '540, does not teach or suggest claimed invention. The rejection of claims 1, 3-6 and 8-15 based on EP 452,540 and JP 53-144760 in view of EP 96,500 should therefore be reversed.

In the advisory action, the examiner gave another argument to support the combination. Namely, the examiner urged that the adhesive of JP '760 was similar to EP 540, and that since there was no limitation as to substrates to be adhered in the European patents, the two-part adhesives of the European patents are similar to that of the Japanese patent (which employs the adhesives for optical lenses) based on the similar substrates to be bonded. The examiner concluded it would be obvious to combine and use 40% dimethacrylate to optimize crosslinking. (See Advisory Action at pages 3-4.)

However, this reasoning is flawed for a number of reasons. Firstly, the examiner again ignores the discussion above where it is explained by appellant that not only are the compositions different but that, in addition, there is no motivation to combine.

Secondly, the examiner is incorrect – EP '500 mentions one, and only one, specific substrate. At page 7, lines 15-16, the substrate is a pair of “abraded gel coat glass-reinforced plastic strip substrates.” Optical lenses are not taught or suggested.

Likewise, the examiner is incorrect with respect to EP '540. In the attached English language Derwent abstract attached (which was submitted to the examiner in the first response to office action), the use listed for the EP '540 adhesive is for the preparation of “adhesive bonds

between shaped articles of polycarbonate, opt. reinforced with glass and/or C fibres.” There is no teaching or suggestion of optical lenses in EP ‘540.

In view of the foregoing, the examiner erred in asserting that since EP ‘500 and EP ‘540 are silent with respect to substrates (which itself is flawed as it lacks a showing of motivation); therefore, the rejection was improper and should be reversed.

Furthermore, the substrates described in EP ‘500 and EP ‘540 do not teach or suggest use with an optical lens as in JP ‘760. The combination of references fails for this additional reason; therefore, the rejection should be reversed.

Thirdly, the examiner incorrectly uses end uses to bootstrap motivation into the equation. However, that logic is faulty – if end use were the determining factor, then the components and their amounts in *any adhesive of any type* would be interchangeable. In other words, using the examiner’s logic, one would be motivated to use a monomer to form polycarbonates in an acrylate formulation if the reference mentioned similar end substrates. In this case, EP ‘540 and EP ‘500 do not even mention a particular end use. For this additional reason the examiner erred and the rejection should be reversed.

In view of the foregoing, the rejection of Claims 1, 3-6, 8-15, and 89-100 under §103 based on EP 452,540 and JP 53-144760 in view of EP 96,500 should be reversed.

## **Issue 2, Group 2 – Claims 6 and 72**

Claims 1, 3-6, 8-15, and 89-100 were rejected under §103 based on EP 452,540 and JP 53-144760 in view of EP 96,500. The examiner reasoned in the final action that

The newly claimed content of difunctional methacrylate monomer of from 10-80 percent by weight in independent claims 1 and 15 is not recited in Japanese '760. Japanese '760 sets forth each liquid of the two-liquid adhesive as containing polyethylene glycol dimethacrylate. It would have been obvious to employ the alkanediol dimethacrylate such as the polyethylene glycol dimethacrylate of Japanese '760 in an amount of as much as 20% by weight shown in European '540 in order to enhance the water and fuel resistance (European '540, abstract, page 2, Use/Advantage section, last line).

(Final Action at page 4.)

Since the rejection was based on “EP 452,540 and JP 53-144760 in view of EP 96,500,” appellant initially notes that EP '500 as well as the combination of EP '500 with EP '540 have been distinguished above, and are reiterated here. Appellant further notes that the examiner has not even mentioned EP '500 in the discussion section of this rejection. The examiner has thus given no rationale for purposes of this specific rejection (Issue 2) as to why EP '500 is applicable to the claims on appeal. Appellant will nonetheless comment on the combination of EP '540 and EP '500 by reiterating the comments above.

In particular, appellant submits that the examiner (a) has failed to establish a teaching or suggestion to support the combination, (b) has incorrectly picked and chosen selected disclosure without considering the references as a whole, (c) has distorted or ignored passages in the applied references, and (d) has used impermissible hindsight to reconstruct the claims.

Contrary to the examiner's allegation in the final action, there is no teaching or suggestion or motivation to employ “1-60%” of alkanediol dimethacrylate or “as much as 20%” of butylene glycol dimethacrylate, as disclosed in EP '540, in the composition disclosed in EP '500. The examiner's allegation is founded on the premise that a skilled artisan would use such 20% to “enhance the water and fuel resistance.” However, this property – water and fuel resistance – is of the entire adhesive disclosed in EP '540. The examiner is merely identifying a property of the whole adhesive in EP

‘540. This language in EP ‘540 thus constitutes merely a statement as to the desired properties of the final composition, not a suggestion that motivates a skilled artisan to modify the composition of EP ‘500 by picking selected items in selected proportions. Likewise, there is no disclosure whatsoever in EP ‘540 that the amount of alkanediol dimethacrylate provides the enhanced water and fuel resistance. Again, the examiner is picking and choosing selected portions of this reference, and ignores EP ‘540’s disclosure as a whole.

What is more, there is no indication or suggestion in EP ‘500 that water and fuel resistance is desired or in need of improvement (if present).

It can be seen that the examiner has manufactured motivation to combine where there is no motivation to combine. Indeed, the examiner has distorted the disclosure of EP ‘540 to allege that this reference leads the skilled artisan to select a specific monomer in a specific amount for the specific purpose of enhancing water and fuel resistance, despite there being no suggestion that the specific monomer in the specific amount will in and of itself impart improved water and fuel resistance to the adhesive as a whole.

In view of the foregoing, it is submitted that the examiner engaged in impermissible hindsight to reconstruct the claims by picking and choosing portions of the references without motivation to do so.

As such, there is no suggestion that any particular component should be selected and employed in the stated percentage in an entirely different composition. The mere fact that both EP ‘540 and EP ‘500 disclose alkanediol dimethacrylates is not sufficient. The examiner fails to show adequate motivation to make the combination.

In the advisory action after appellant’s response to final action, the examiner did not appear to comment on appellant’s remarks with respect to “water and fuel resistance” not providing motivation. It is unclear whether the examiner continues to make the assertion as to “water and fuel resistance” providing motivation because in the examiner switched gears, asserting that EP ‘500 and EP ‘540 both show two-part adhesives which allegedly prove up motivation to combine. (See page

3, first full paragraph of the advisory action.) Further, the examiner asserted that since EP ‘540 used 1-60% alkanediol dimethacrylate as a crosslinking monomer, it would be obvious to use the alkanediol dimethacrylate of EP ‘500 within the range of from 1-60% and 50% in order “to optimize the crosslinking of the polymerized monomer mixture.” (See page 3, second full paragraph of the advisory action.) The examiner’s allegations in the advisory are also improper and incorrect.

In particular, EP ‘500 discloses only 2 percent of its difunctional methacrylate in the examples, which is the only place in EP ‘500 where any amounts of difunctional methacrylate are disclosed. Appellants’ claimed lower end of 10 percent is roughly 5 times greater than that disclosed in EP ‘500 if EP ‘500 discloses 2 percent of the total adhesive (and roughly 10 times greater if the 2 percent is for an A side or B side only). As such, EP ‘500 does not teach or suggest compositions that employ 10 to 80 percent by weight of difunctional methacrylate. In addition, while the examiner cites EP ‘540 for the proposition that 20% (or 40%) dimethacrylate can be used in the composition of EP ‘500, it should be noted that EP ‘500 uses 53% of monofunctional monomer and 42% of a copolymer (see e.g., example 3 where 43% tetrahydrofurfuryl methacrylate and 10% methacrylic acid and 42% of a copolymer are used). These components total 95% of the composition. As such, there is clearly no reason why a skilled artisan would use 10% or more of difunctional methacrylate. There would be no room for 20% and certainly not 40% dimethacrylate in the composition of EP ‘500. Indeed, owing to these percentages, a skilled artisan would be affirmatively motivated to not increase the amount of difunctional methacrylate. Accordingly, a skilled artisan would not be motivated to make the change to EP ‘500 that was suggested by the examiner.

The examiner has also asserted in the advisory action that the EP ‘500 is not limited to its examples. However, there is no suggestion in this reference to have less than 95% monofunctional monomer and copolymer. The examples, furthermore, are the only place where amounts are mentioned. Silence in a reference is hardly a proper substitute for an adequate disclosure of facts from which a conclusion of obviousness may justifiably follow. *Application of Bart*, 356 F.2d 115, 148 U.S.P.Q. 548 (CCPA 1966).

Apart from the examples, there is no disclosure in EP '500 as to amounts. Thus, the examiner's admonition that a reference is not limited to the examples has no bearing on the case at hand. Likewise, the examiner reference to page 2, lines 19-21 and page 3, lines 6-16 misses the point entirely since these passages provide no rationale for any amounts whatsoever. The passages cited by the examiner merely describe the monomers that can be used: no amounts are given at all. It can be seen, therefore, that EP '500 provides no disclosure as to proportions and amounts except in the three examples.

Furthermore, apart from circular reasoning that one would want to increase crosslinking by increasing the amount of crosslinker, the examiner has provided no reasoning whatsoever why a skilled artisan would want to increase the amount of crosslinking in the composition of EP '500. Indeed, the fact that every single example (the only disclosure of amount in EP '500) discloses less than about two percent dimethacrylate teaches away from the examiner's assertion. In other words, there is no reason apparent that one would desire additional crosslinking in EP '500.

What is more, the compositions of EP '500 and '540 are quite different. EP '500 discloses a unique cure system which includes ferrocene as a required component. The cure system provides "a controllable induction period ... followed by rapid polymerization." (Page 2, lines 3-6.) By contrast, EP '540 strictly uses an organic peroxide. Owing to the specific properties of EP '500's composition, a skilled artisan would not be motivated to make changes to use five times, or more, dimethacrylate based on the disclosure in an unrelated reference (the EP '540 reference). Furthermore, there is no indication that "water and fuel resistance" is a desired property, let alone is deficient, in EP '500's composition.

In the advisory action, the examiner asserts that the "ferrocene accelerator with the peroxide in European '500 does not render it 'quite different' from the formulation of European '540 since it is a non-reactive component which increases the cure rate which is not repugnant to the equivalent two-part adhesive of European '540." (Advisory action at page 2.) Here, the examiner again overlooks the disclosure of EP '500. As noted above, the examiner overlooks the specific properties of the polymers of each reference, and fails to explain why there is motivation for the combination.

In particular, the examiner's statement that an increase "is not repugnant to the equivalent two-part adhesive" is simply not the same as a motivation to make the change.

In view of the foregoing, the examiner erred in rejecting the claims of Group 1 based on EP '500 in view of EP '540. The rejection should therefore be withdrawn.

Turning to the JP '760 abstract, it is seen that this reference gives no percentages whatsoever for the difunctional methacrylate. In this sense, JP '760 is similar to the text other than the examples of EP '500. It can be seen that JP '760 also does not teach or suggest 10 to 80 percent difunctional methacrylate in the adhesive system.

In addition to the English abstract provided by the examiner, appellant obtained a translation of Tables 1 and 2 in JP '760. A copy of the English translation of Tables 1 and 2 were attached to the response to first office action. Notably, neither example employs a dimethacrylate in JP '760.

Furthermore, the compositions of EP '540 and JP 53-144760 are completely different. In this regard, note that JP 53-144760 calls for an elastomer such as NBR or SBR. In Table 1, 10 parts by weight of carboxylated NBR are employed on both the A and B sides. Likewise, a silane coupling agent is used in all cases; however, there is no suggestion in EP '540 that a silane coupling agent can be used in the disclosed composition of EP '540.

JP 53-144760 states, moreover, that the composition disclosed therein is for adhering optical lens, which use is neither taught nor suggested in EP '540. As such, the composition of JP 53-144760 is designed for a specific purpose and attempts to modify it would be fraught with the prospect of destroying the purpose of the invention of JP 53-144760. What is more, there is no indication that the uses relied upon by the examiner to justify the combination – namely to enhance the water and fuel resistance – have any relation whatsoever to adhering two lens together as described in JP 53-144760. Indeed, water and fuel resistance appear to be irrelevant to the use described in JP 53-144760 and there is no indication that the cured adhesive would even be exposed to the elements in the use contemplated by JP 53-144760. Accordingly, a skilled artisan would not seek to use 20% or more of a difunctional methacrylate in the composition of JP 53-144760. This

further exemplifies the lack of teaching or suggestion to support the combination alleged by the examiner.

In view of the foregoing, JP 53-144760, alone or in combination with any of the applied references including EP '540, does not teach or suggest claimed invention. The rejection of claims 1, 3-6 and 8-15 based on EP 452,540 and JP 53-144760 in view of EP 96,500 should therefore be reversed.

In the advisory action, the examiner gave another argument to support the combination. Namely, the examiner urged that the adhesive of JP '760 was similar to EP 540, and that since there was no limitation as to substrates to be adhered in the European patents, the two-part adhesives of the European patents are similar to that of the Japanese patent (which employs the adhesives for optical lenses) based on the similar substrates to be bonded. The examiner concluded it would be obvious to combine and use 40% dimethacrylate to optimize crosslinking. (See Advisory Action at pages 3-4.)

However, this reasoning is flawed for a number of reasons. Firstly, the examiner again ignores the discussion above where it is explained by appellant that not only are the compositions different but that, in addition, there is no motivation to combine.

Secondly, the examiner is incorrect – EP '500 mentions one, and only one, specific substrate. At page 7, lines 15-16, the substrate is a pair of “abraded gel coat glass-reinforced plastic strip substrates.” Optical lenses are not taught or suggested.

Likewise, the examiner is incorrect with respect to EP '540. In the attached English language Derwent abstract attached (which was submitted to the examiner in the first response to office action), the use listed for the EP '540 adhesive is for the preparation of “adhesive bonds between shaped articles of polycarbonate, opt. reinforced with glass and/or C fibres.” There is no teaching or suggestion of optical lenses in EP '540.



In view of the foregoing, the examiner erred in asserting that since EP '500 and EP '540 are silent with respect to substrates (which itself is flawed as it lacks a showing of motivation); therefore, the rejection was improper and should be reversed.

Furthermore, the substrates described in EP '500 and EP '540 do not teach or suggest use with an optical lens as in JP '760. The combination of references fails for this additional reason; therefore, the rejection should be reversed.

Thirdly, the examiner incorrectly uses end uses to bootstrap motivation into the equation. However, that logic is faulty – if end use were the determining factor, then the components and their amounts in *any adhesive of any type* would be interchangeable. In other words, using the examiner's logic, one would be motivated to use a monomer to form polycarbonates in an acrylate formulation if the reference mentioned similar end substrates. In this case, EP '540 and EP '500 do not even mention a particular end use. For this additional reason the examiner erred and the rejection should be reversed.

The rejection is further in error with respect to Claims 6 and 92 (Group 2) because the references provide no teaching or suggestion, either alone or in combination, of the claimed subject matter of the base claims that further comprise fused silica in Part A. EP '500 merely discloses 1.5% of silicon dioxide in the examples, which is different from fused silica. JP 53-144760 is also silent with respect to fused silica. Claims 6 and 92 were improperly rejected for this additional reason.

In view of the foregoing, the rejection of claims 6 and 92 (Group 2) under §103 based on EP 452,540 and JP 53-144760 in view of EP 96,500 should be reversed.

### Issue 3, Group 3 – Claims 2 and 88

Claims 2 and 88 were rejected under §103 based on EP 452,540 and JP 53-144760 in view of EP 96,500 and further in view of Edelman (US 5,865,936). The examiner reasoned

The claimed thickener, thixotrope or adhesion promoter of claim 2 is not recited. Edelman et al. sets forth a two-part adhesive prepared from a first part of (meth)acrylate monomers or oligomers, chelating agent, a hydroperoxide and ferric ions, and a second part of a substituted dihydropyridine second part (col. 2, lines 43-57). Additives including thickeners, adhesion promoters and thixotropic agents are suitable (col. 4, lines 5-12).

It would have been obvious to include the thickener, adhesion promoter or thixotropic agent of Edelman et al. to the two-part adhesives of European ‘500 and ‘540 and the Japanese patent in order to optimize the adhesive or rheological properties.

(Office Action dated 11/20/02 at pages 5.) Appellant disagrees.

Since the rejection was based on “EP 452,540 *and* JP 53-144760 in view of EP 96,500,” appellant initially notes that EP ‘500 as well as the combination of EP ‘500 with EP ‘540 have been distinguished above, and are reiterated here. Appellant further notes that the examiner has not even mentioned EP ‘500 in the discussion section of this rejection. The examiner has thus given no rationale for purposes of this specific rejection (Issue 2) as to why EP ‘500 is applicable to the claims on appeal. Appellant will nonetheless comment on the combination of EP ‘540 and EP ‘500 by reiterating the comments above.

In particular, appellant submits that the examiner (a) has failed to establish a teaching or suggestion to support the combination, (b) has incorrectly picked and chosen selected disclosure without considering the references as a whole, (c) has distorted or ignored passages in the applied references, and (d) has used impermissible hindsight to reconstruct the claims.

Contrary to the examiner’s allegation in the final action, there is no teaching or suggestion or motivation to employ “1-60%” of alkanediol dimethacrylate or “as much as 20%” of butylene glycol dimethacrylate, as disclosed in EP ‘540, in the composition disclosed in EP ‘500. The examiner’s allegation is founded on the premise that a skilled artisan would use such 20% to “enhance the water and fuel resistance.” However, this property – water and fuel resistance – is of the entire adhesive

disclosed in EP '540. The examiner is merely identifying a property of the whole adhesive in EP '540. This language in EP '540 thus constitutes merely a statement as to the desired properties of the final composition, not a suggestion that motivates a skilled artisan to modify the composition of EP '500 by picking selected items in selected proportions. Likewise, there is no disclosure whatsoever in EP '540 that the amount of alkanediol dimethacrylate provides the enhanced water and fuel resistance. Again, the examiner is picking and choosing selected portions of this reference, and ignores EP '540's disclosure as a whole.

What is more, there is no indication or suggestion in EP '500 that water and fuel resistance is desired or in need of improvement (if present).

It can be seen that the examiner has manufactured motivation to combine where there is no motivation to combine. Indeed, the examiner has distorted the disclosure of EP '540 to allege that this reference leads the skilled artisan to select a specific monomer in a specific amount for the specific purpose of enhancing water and fuel resistance, despite there being no suggestion that the specific monomer in the specific amount will in and of itself impart improved water and fuel resistance to the adhesive as a whole.

In view of the foregoing, it is submitted that the examiner engaged in impermissible hindsight to reconstruct the claims by picking and choosing portions of the references without motivation to do so.

As such, there is no suggestion that any particular component should be selected and employed in the stated percentage in an entirely different composition. The mere fact that both EP '540 and EP '500 disclose alkanediol dimethacrylates is not sufficient. The examiner fails to show adequate motivation to make the combination.

In the advisory action after appellant's response to final action, the examiner did not appear to comment on appellant's remarks with respect to "water and fuel resistance" not providing motivation. It is unclear whether the examiner continues to make the assertion as to "water and fuel resistance" providing motivation because in the examiner switched gears, asserting that EP '500 and

EP '540 both show two-part adhesives which allegedly prove up motivation to combine. (See page 3, first full paragraph of the advisory action.) Further, the examiner asserted that since EP '540 used 1-60% alkanediol dimethacrylate as a crosslinking monomer, it would be obvious to use the alkanediol dimethacrylate of EP '500 within the range of from 1-60% and 50% in order "to optimize the crosslinking of the polymerized monomer mixture." (See page 3, second full paragraph of the advisory action.) The examiner's allegations in the advisory are also improper and incorrect.

In particular, EP '500 discloses only 2 percent of its difunctional methacrylate in the examples, which is the only place in EP '500 where any amounts of difunctional methacrylate are disclosed. Appellants' claimed lower end of 10 percent is roughly 5 times greater than that disclosed in EP '500 if EP '500 discloses 2 percent of the total adhesive (and roughly 10 times greater if the 2 percent is for an A side or B side only). As such, EP '500 does not teach or suggest compositions that employ 10 to 80 percent by weight of difunctional methacrylate. In addition, while the examiner cites EP '540 for the proposition that 20% (or 40%) dimethacrylate can be used in the composition of EP '500, it should be noted that EP '500 uses 53% of monofunctional monomer and 42% of a copolymer (see e.g., example 3 where 43% tetrahydrofurfuryl methacrylate and 10% methacrylic acid and 42% of a copolymer are used). These components total 95% of the composition. As such, there is clearly no reason why a skilled artisan would use 10% or more of difunctional methacrylate. There would be no room for 20% and certainly not 40% dimethacrylate in the composition of EP '500. Indeed, owing to these percentages, a skilled artisan would be affirmatively motivated to not increase the amount of difunctional methacrylate. Accordingly, a skilled artisan would not be motivated to make the change to EP '500 that was suggested by the examiner.

The examiner has also asserted in the advisory action that the EP '500 is not limited to its examples. However, there is no suggestion in this reference to have less than 95% monofunctional monomer and copolymer. The examples, furthermore, are the only place where amounts are mentioned. Silence in a reference is hardly a proper substitute for an adequate disclosure of facts from which a conclusion of obviousness may justifiably follow. *Application of Bart*, 356 F.2d 115, 148 U.S.P.Q. 548 (CCPA 1966).

Apart from the examples, there is no disclosure in EP '500 as to amounts. Thus, the examiner's admonition that a reference is not limited to the examples has no bearing on the case at hand. Likewise, the examiner reference to page 2, lines 19-21 and page 3, lines 6-16 misses the point entirely since these passages provide no rationale for any amounts whatsoever. The passages cited by the examiner merely describe the monomers that can be used: no amounts are given at all. It can be seen, therefore, that EP '500 provides no disclosure as to proportions and amounts except in the three examples.

Furthermore, apart from circular reasoning that one would want to increase crosslinking by increasing the amount of crosslinker, the examiner has provided no reasoning whatsoever why a skilled artisan would want to increase the amount of crosslinking in the composition of EP '500. Indeed, the fact that every single example (the only disclosure of amount in EP '500) discloses less than about two percent dimethacrylate teaches away from the examiner's assertion. In other words, there is no reason apparent that one would desire additional crosslinking in EP '500.

What is more, the compositions of EP '500 and '540 are quite different. EP '500 discloses a unique cure system which includes ferrocene as a required component. The cure system provides "a controllable induction period ... followed by rapid polymerization." (Page 2, lines 3-6.) By contrast, EP '540 strictly uses an organic peroxide. Owing to the specific properties of EP '500's composition, a skilled artisan would not be motivated to make changes to use five times, or more, dimethacrylate based on the disclosure in an unrelated reference (the EP '540 reference). Furthermore, there is no indication that "water and fuel resistance" is a desired property, let alone is deficient, in EP '500's composition.

In the advisory action, the examiner asserts that the "ferrocene accelerator with the peroxide in European '500 does not render it 'quite different' from the formulation of European '540 since it is a non-reactive component which increases the cure rate which is not repugnant to the equivalent two-part adhesive of European '540." (Advisory action at page 2.) Here, the examiner again overlooks the disclosure of EP '500. As noted above, the examiner overlooks the specific properties of the polymers of each reference, and fails to explain why there is motivation for the combination.

In particular, the examiner's statement that an increase "is not repugnant to the equivalent two-part adhesive" is simply not the same as a motivation to make the change.

In view of the foregoing, the examiner erred in rejecting the claims of Group 1 based on EP '500 in view of EP '540. The rejection should therefore be withdrawn.

Turning to the JP '760 abstract, it is seen that this reference gives no percentages whatsoever for the difunctional methacrylate. In this sense, JP '760 is similar to the text other than the examples of EP '500. It can be seen that JP '760 also does not teach or suggest 10 to 80 percent difunctional methacrylate in the adhesive system.

In addition to the English abstract provided by the examiner, appellant obtained a translation of Tables 1 and 2 in JP '760. A copy of the English translation of Tables 1 and 2 were attached to the response to first office action. Notably, neither example employs a dimethacrylate in JP '760.

Furthermore, the compositions of EP '540 and JP 53-144760 are completely different. In this regard, note that JP 53-144760 calls for an elastomer such as NBR or SBR. In Table 1, 10 parts by weight of carboxylated NBR are employed on both the A and B sides. Likewise, a silane coupling agent is used in all cases; however, there is no suggestion in EP '540 that a silane coupling agent can be used in the disclosed composition of EP '540.

JP 53-144760 states, moreover, that the composition disclosed therein is for adhering optical lens, which use is neither taught nor suggested in EP '540. As such, the composition of JP 53-144760 is designed for a specific purpose and attempts to modify it would be fraught with the prospect of destroying the purpose of the invention of JP 53-144760. What is more, there is no indication that the uses relied upon by the examiner to justify the combination – namely to enhance the water and fuel resistance – have any relation whatsoever to adhering two lens together as described in JP 53-144760. Indeed, water and fuel resistance appear to be irrelevant to the use described in JP 53-144760 and there is no indication that the cured adhesive would even be exposed to the elements in the use contemplated by JP 53-144760. Accordingly, a skilled artisan would not seek to use 20% or more of a difunctional methacrylate in the composition of JP 53-144760. This

further exemplifies the lack of teaching or suggestion to support the combination alleged by the examiner.

In view of the foregoing, JP 53-144760, alone or in combination with any of the applied references including EP '540, does not teach or suggest claimed invention. The rejection of claims 1, 3-6 and 8-15 based on EP 452,540 and JP 53-144760 in view of EP 96,500 should therefore be reversed.

In the advisory action, the examiner gave another argument to support the combination. Namely, the examiner urged that the adhesive of JP '760 was similar to EP 540, and that since there was no limitation as to substrates to be adhered in the European patents, the two-part adhesives of the European patents are similar to that of the Japanese patent (which employs the adhesives for optical lenses) based on the similar substrates to be bonded. The examiner concluded it would be obvious to combine and use 40% dimethacrylate to optimize crosslinking. (See Advisory Action at pages 3-4.)

However, this reasoning is flawed for a number of reasons. Firstly, the examiner again ignores the discussion above where it is explained by appellant that not only are the compositions different but that, in addition, there is no motivation to combine.

Secondly, the examiner is incorrect – EP '500 mentions one, and only one, specific substrate. At page 7, lines 15-16, the substrate is a pair of “abraded gel coat glass-reinforced plastic strip substrates.” Optical lenses are not taught or suggested.

Likewise, the examiner is incorrect with respect to EP '540. In the attached English language Derwent abstract attached (which was submitted to the examiner in the first response to office action), the use listed for the EP '540 adhesive is for the preparation of “adhesive bonds between shaped articles of polycarbonate, opt. reinforced with glass and/or C fibres.” There is no teaching or suggestion of optical lenses in EP '540.

In view of the foregoing, the examiner erred in asserting that since EP '500 and EP '540 are silent with respect to substrates (which itself is flawed as it lacks a showing of motivation); therefore, the rejection was improper and should be reversed.

Furthermore, the substrates described in EP '500 and EP '540 do not teach or suggest use with an optical lens as in JP '760. The combination of references fails for this additional reason; therefore, the rejection should be reversed.

Thirdly, the examiner incorrectly uses end uses to bootstrap motivation into the equation. However, that logic is faulty – if end use were the determining factor, then the components and their amounts in *any adhesive of any type* would be interchangeable. In other words, using the examiner's logic, one would be motivated to use a monomer to form polycarbonates in an acrylate formulation if the reference mentioned similar end substrates. In this case, EP '540 and EP '500 do not even mention a particular end use. For this additional reason the examiner erred and the rejection should be reversed.

The rejection is further in error with respect to Claims 2 and 88 (Group 3) because the references provide no teaching or suggestion, either alone or in combination, of the claimed subject matter of the base claims that further comprise a thickener, a thixotrope, an adhesion promoter, or combination thereof. As admitted by the examiner, EP '540, EP '500, and the Japanese reference do not disclose a thickener, a thixotrope, and adhesion promoter, or combination thereof. The examiner turned to Edelman for this teaching.

However, the examiner gave no explanation for the motivation to combine apart from a weak assessment that one would want to optimize the adhesive or rheological properties by adding additives that may affect adhesion or rheological properties. This, again, is circular reasoning. The examiner does not indicate where in the references there is a teaching or suggestion to support the combination. What is more, the thickener, thixotrope, and adhesion promoter are optional components in Edelman, which cuts against an argument that these components should be combined with another reference.



In this regard, it should be noted that Edelman relates to a two part structural acrylic adhesive containing as a first part a mixture of acrylate or methacrylates monomers or oligomers, maleic acid, a hydroperoxide, and a source of ferric ions, and as a second activator part a substituted dihydropyridine. The Edelman adhesive is wholly different from the compositions in EP '540, EP '500, and the Japanese reference. While the other references discuss acrylates and hydroperoxide, there is no mention in the other references of maleic acid, a source of ferric ions, or a substituted dihydropyridine. Thus, a skilled artisan would not be motivated to combine these references as suggested by the examiner.

It should also be noted that the examiner appears to be making a four-way obviousness rejection. The fact that four references are needed by the examiner to make the rejection is itself indicia that the claims are nonobvious.

Claims 2 and 88 were improperly rejected for this additional reason.

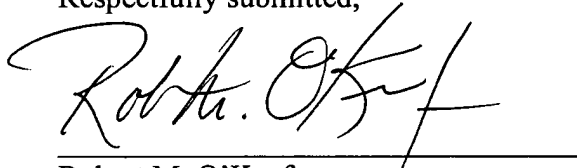
In view of the foregoing, the rejection of claims 2 and 88 (Group 3) under §103 based on EP 452,540 and JP 53-144760 in view of EP 96,500 and further in view of Edelman should be reversed.

**CONCLUSION**

In view of the foregoing, this Honorable Board is respectfully requested to reverse the examiner's rejections under §103.

No fee is believed to be due, however, should any fees under 37 CFR 1.16-1.21 be required for any reason relating to the enclosed materials, the Commissioner is authorized to deduct such fees from Deposit Account No. 10-1205.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Robt. O'Keefe", written over a horizontal line.

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**9. Appendix**  
**Claims on Appeal**

1. A two-part adhesive system, comprising:
  - (a) an adhesive part A, which comprises:

a monomer selected from the group consisting of a monofunctional acrylate monomer, a difunctional acrylate monomer, a trifunctional acrylate monomer, a monofunctional methacrylate monomer, a difunctional methacrylate monomer, a trifunctional methacrylate monomer, and a combination thereof;

a peroxide or hydroperoxide free-radical initiator; and

an antioxidant;
  - (b) an activator part B, which comprises:

a N,N-disubstituted aromatic amine,

a difunctional methacrylate monomer,

an antioxidant,

wherein the difunctional methacrylate monomer is present in an amount of from 10 to 80 percent by weight based on the total weight of the adhesive system, and wherein the difunctional methacrylate monomer is an alkylene glycol dimethacrylate.
2. The system of claim 1 further comprising and a thickener, a thixotrope, an adhesion promoter, or combination thereof.
3. The system of claim 1 wherein for Part A the monomer is selected from the group consisting of methyl methacrylate, methacrylic acid, isobornyl methacrylate, ethylene glycol dimethacrylate, ethoxylated bisphenol A diacrylate esters, tetraethylene glycol dimethacrylate, diethylene glycol dimethacrylate, diethylene glycol diacrylate, tris (2-hydroxyethyl) isocyanurate triacrylate, an alkyl ester of acrylic acid, a hydroxy alkyl ester of acrylic acid, a hydroxy alkyl ester of methacrylic acid, butyleneglycol dimethacrylate, tetraethyleneglycol dimethacrylate, polyethylene glycol dimethacrylate, bisphenol A dimethacrylate, ethoxylated bisphenol A dimethacrylate, pentaerythritol dimethacrylate, butyleneglycol trimethacrylate, polyethylene glycol trimethacrylate, bisphenol A trimethacrylate, ethoxylated bisphenol A trimethacrylate, and pentaerythritol trimethacrylate.

4. The system of claim 1 wherein any other monomers present apart from the difunctional methacrylate monomer are in amounts ranging from about 5 to about 30 percent based on weight of the total formulation.

5. The system of claim 1 wherein the free-radical initiator is benzoyl peroxide (BPO), cumene hydroperoxide, or a combination thereof.

6. The system of claim 1 further comprising fused silica in Part A.

7. (Canceled.)

8. The system of claim 1 wherein the antioxidant is hydroquinone, benzoquinone, or a combination thereof.

9. The system of claim 1 wherein in Part B the difunctional methacrylate monomer is ethylene glycol dimethacrylate or propylene glycol dimethacrylate.

10. The system of claim 1 wherein in Part A the monomer is ethylene glycol dimethacrylate or propylene glycol dimethacrylate.

11. The system of claim 1 wherein in Part B the difunctional methacrylate monomer is present in an amount of from about 5.57 percent to about 99 percent.

12. The system of claim 1 wherein in Part B the N,N-disubstituted aromatic amine is N,N-dimethyl-p-toluidine, N,N-dimethylaniline, N,N-diethylaniline, or 4,4'-methylenebis (N,N-dimethylaniline).

13. The system of claim 1 wherein the N,N-disubstituted aromatic amine is present in an amount of from about 0.5 to about 5.0 percent by weight of Part B.

14. The system of claim 1 wherein the amounts of parts A and B are at a volume ratio of part A to part B of about 1:1.

15. The reaction product formed from a two-part adhesive system comprised of a part A and a part B, wherein part A and part B comprise:

(a) an adhesive part A, which comprises:

a monomer selected from the group consisting of a monofunctional acrylate monomer, a difunctional acrylate monomer, a trifunctional acrylate monomer, a monofunctional methacrylate monomer, a difunctional methacrylate monomer, a trifunctional methacrylate monomer, and a combination thereof;

a peroxide or hydroperoxide free-radical initiator; and  
an antioxidant;

(b) an activator part B, which comprises:

a N,N-disubstituted aromatic amine,  
a difunctional methacrylate monomer,  
an antioxidant,

wherein the difunctional methacrylate monomer is present in an amount of from 10 to 80 percent by weight based on the total weight of the adhesive system, and wherein the difunctional methacrylate monomer is an alkylene glycol dimethacrylate.

Claims 16-87 (canceled).

88. The reaction product of claim 15 further comprising and a thickener, a thixotrope, an adhesion promoter, or combination thereof.

89. The reaction product of claim 15 wherein for Part A the monomer is selected from the group consisting of methyl methacrylate, methacrylic acid, isobornyl methacrylate, ethylene glycol dimethacrylate, ethoxylated bisphenol A diacrylate esters, tetraethylene glycol dimethacrylate, diethylene glycol dimethacrylate, diethylene glycol diacrylate, tris (2-hydroxyethyl) isocyanurate triacrylate, an alkyl ester of acrylic acid, a hydroxy alkyl ester of acrylic acid, a hydroxy alkyl ester of methacrylic acid, butyleneglycol dimethacrylate, tetraethyleneglycol dimethacrylate, polyethylene

glycol dimethacrylate, bisphenol A dimethacrylate, ethoxylated bisphenol A dimethacrylate, pentaerythritol dimethacrylate, butyleneglycol trimethacrylate, ~~tetraethyleneglycol trimethacrylate~~, polyethylene glycol trimethacrylate, bisphenol A trimethacrylate, ethoxylated bisphenol A trimethacrylate, and pentaerythritol trimethacrylate.

90. The reaction product of claim 15 wherein any other monomers present apart from the difunctional methacrylate monomer are in amounts ranging from about 5 to about 30 percent based on weight of the total formulation.

91. The reaction product of claim 15 wherein the free-radical initiator is benzoyl peroxide (BPO), cumene hydroperoxide, or a combination thereof.

92. The reaction product of claim 15 further comprising fused silica in Part A.

93. The reaction product of claim 15 wherein the antioxidant is hydroquinone, benzoquinone, or a combination thereof.

94. The reaction product of claim 15 wherein in Part B the difunctional methacrylate monomer is ethylene glycol dimethacrylate or propylene glycol dimethacrylate.

95. The reaction product of claim 15 wherein in Part A the monomer is ethylene glycol dimethacrylate or propylene glycol dimethacrylate.

96. The reaction product of claim 15 wherein in Part B the N,N-disubstituted aromatic amine is N,N-dimethyl-p-toluidine, N,N-dimethylaniline, N,N-diethylaniline, or 4,4'-methylenebis (N,N-dimethylaniline).

97. The reaction product of claim 15 wherein the N,N-disubstituted aromatic amine is present in an amount of from about 0.5 to about 5.0 percent by weight of Part B.

98. The reaction product of claim 15 wherein the amounts of parts A and B are at a volume ratio of part A to part B of about 1:1.

99. The reaction product of claim 15 wherein in part A at least one monomer is an alkylene glycol dimethacrylate.

100. The system of claim 1 wherein in part A at least one monomer is an alkylene glycol dimethacrylate.